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# **Japan: The Value of the Yen**

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**An Intelligence Assessment**

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*EA 84-10043  
March 1984*

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# **Japan: The Value of the Yen**

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**An Intelligence Assessment**

This paper was prepared by [redacted]  
Office of East Asian Analysis. Comments and queries  
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**Japan:  
The Value of the Yen**

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**Key Judgments**

*Information available  
as of 2 March 1984  
was used in this report.*

The tripling of Japan's current account surplus—the balance of trade in goods and services—in 1983 focused attention on the value of the yen. Many analysts claim the yen is the prime ingredient in Japan's export competitiveness. Others argue that the dollar is overvalued or that the mushrooming of the surplus is a function of cyclical factors, including the rapid economic recovery in the United States.

We believe it is helpful to review some of the arguments concerning the yen's value and analyze, to the extent possible, their merits. This review and analysis includes:

- A summary of the behavior of Japan's current account—considered by the Organization for Economic Cooperation and Development to be the primary long-term test for the appropriateness of a currency's value.
- An analysis of the yen's movements relative to other major currencies and the extent to which these movements compensate for differing rates of inflation among trading partners.
- A review of the factors that influence the yen's value and an analysis of the increasingly important role of capital outflows in pushing the yen downward.
- A discussion of the prospects for yen appreciation.

Our analysis shows that capital outflows are playing an important role in determining the yen's value. These outflows result in part from a surplus of savings over investment that occurs in times of recession. Ongoing efforts at financial market liberalization have helped increase these outflows.

We believe there are signs of a reversal in the yen's weakness. In 1983 Japan's earnings from its current account surplus exceeded long-term capital outflows, causing some yen appreciation, particularly against European currencies. Barring a surge in commodity prices, we believe the current account surplus will exceed long-term capital outflows again in 1984, which should spur further yen appreciation against both European currencies and the US dollar. Most analysts are predicting a 5- to 10-percent strengthening against the dollar. Even if realized, Japanese exports will remain unusually competitive in the United States. Given the yen's history of volatility against the dollar, however, we believe more rapid appreciation is quite possible. A rapid substantial appreciation would quickly reduce the growth of Japanese exports and promote imports of manufactured goods.

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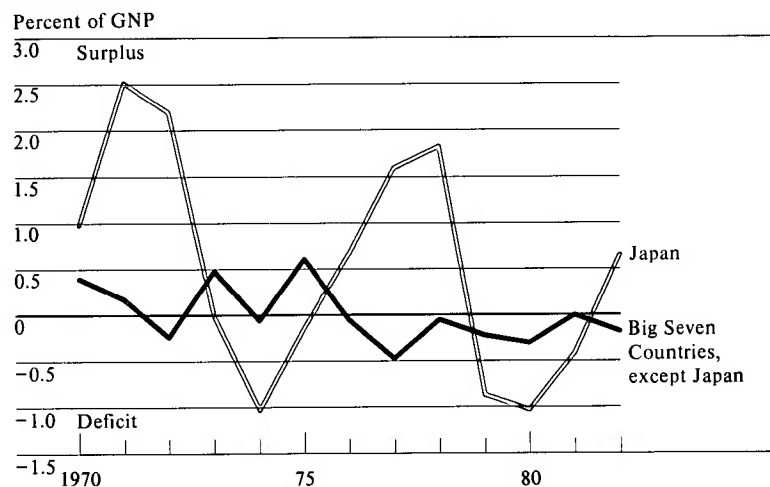
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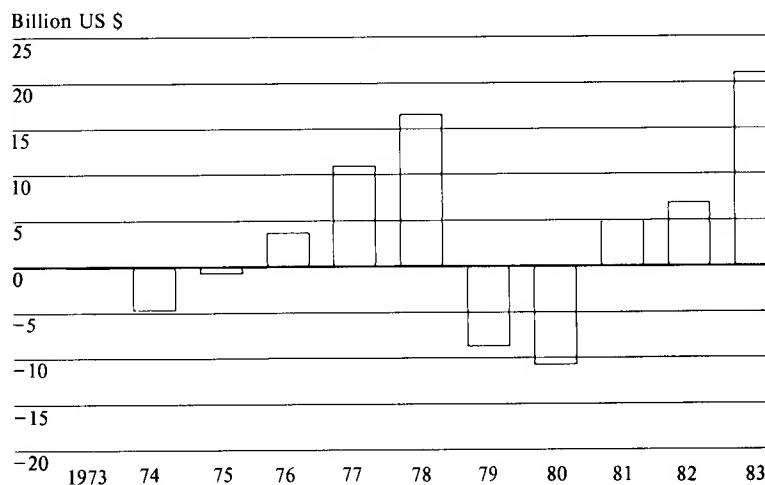
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**Figure 1**  
**Japan and Other Big Seven**  
**Countries: Current Account-to-GNP**  
**Ratios, 1970-82**



**Figure 2**  
**Japan: Current Account Balance,**  
**1973-83**



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**Japan:  
The Value of the Yen**

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**A Review of Current  
Account Behavior**

One method of judging whether a currency is undervalued is to analyze current account statistics;<sup>1</sup> an undervalued currency will generate chronic surpluses. The Organization for Economic Cooperation and Development (OECD) has specified what an acceptable current account balance is for the Big Seven countries—the United States, the United Kingdom, West Germany, France, Italy, Japan, and Canada. According to the OECD, these countries should share their collective surplus or deficit in proportion to economic size, as measured by GNP:

- From 1973 through 1982, Japan ran a current account surplus equal to 0.2 percent of GNP. The other Big Seven countries ran a deficit amounting to less than 0.1 percent of their combined GNP.
- Among Big Seven countries, Japan, West Germany, and the United Kingdom ran surpluses for the period in question. The surplus of the United Kingdom—an oil exporter in recent years—was the largest of the three, averaging 0.4 percent of GNP.
- The United States ran a negligible deficit from 1973 through 1982, but France and Canada ran relatively large deficits.

The current account data, which show that Japan ran a small surplus relative to GNP during the decade, imply the yen has been chronically but not substantially undervalued. The long-term figures, however, conceal the mushrooming of the surplus that usually occurs during periods of world economic recovery:

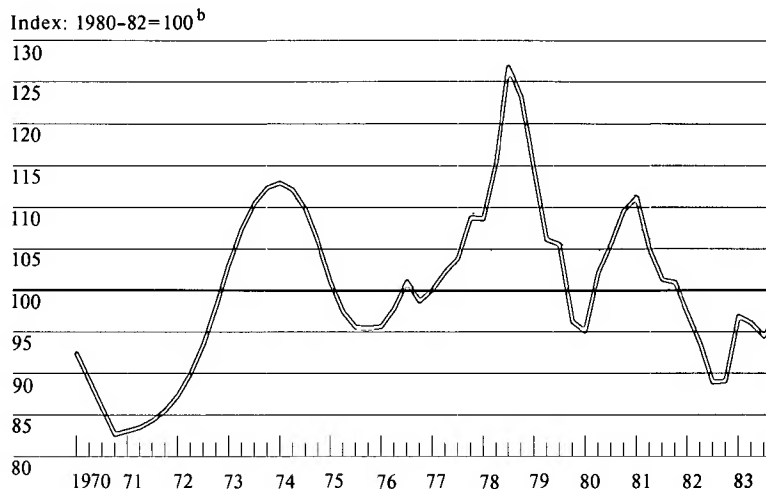
- Japan ran a \$21 billion surplus in 1983 and will have a \$20-30 billion surplus this year, according to most economic analysts.
- In 1977 and 1978, when the OECD recovery was well under way, Japan ran surpluses of \$11 billion and \$17 billion, respectively.

The periodic swelling of the surplus implies that the yen depreciation that followed each of the oil shocks was excessive.

<sup>1</sup> Analysts caution, however, that current account data are becoming increasingly unreliable. Apparently because of errors in measuring service receipts, reported global current account deficits exceed surpluses by \$100 billion, up from less than \$20 billion a few years ago.

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**Figure 3**  
**Japan: Price-Adjusted, Trade-Weighted Movements of the Yen, 1970-83<sup>a</sup>**



<sup>a</sup> Quarterly data.

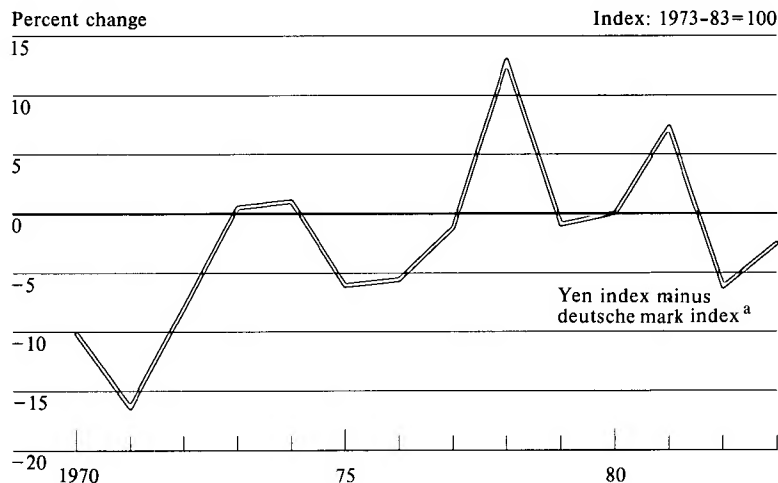
<sup>b</sup> An index below 100 indicates the yen is undervalued relative to the base period.

**Figure 4**  
**Japan: Price-Adjusted Movement of the Yen Against the Dollar, 1970-83**



<sup>a</sup> A negative index indicates the yen is undervalued relative to the dollar compared with the 10-year baseline.

**Figure 5**  
**Japan: Price-Adjusted Movement of the Yen Against the Deutsche Mark, 1970-83**



<sup>a</sup> A negative index indicates the yen is undervalued relative to the deutsche mark compared with the 10-year baseline.

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**How the Yen  
Has Adjusted for  
Inflation Differentials**

Current account statistics show the yen is undervalued, but give no idea how much. To quantify the extent of a currency's undervaluation, most analysts rely on trade-weighted, price-adjusted exchange rate indexes. These indexes show the extent to which a country's currency movements offset inflation differentials with trading partners:

- For example, if a country has an inflation rate that is 3 percentage points per year above the average for its trading partners, its currency would have to depreciate by 3 percent per year to maintain its competitive position. If the currency declined by more than 3 percent and the index fell below 100, that country would have gained competitive advantage.

Morgan Guaranty Trust Company compiles the most widely circulated set of these indicators in the United States. The index uses spot exchange rates and is based on wholesale price inflation for nonfood manufactured goods for the currencies of 15 countries:

- According to Morgan's calculations using a base period of 1980-82, the yen was undervalued at the end of 1983 by about 3 percent compared with the currencies of other industrialized countries.

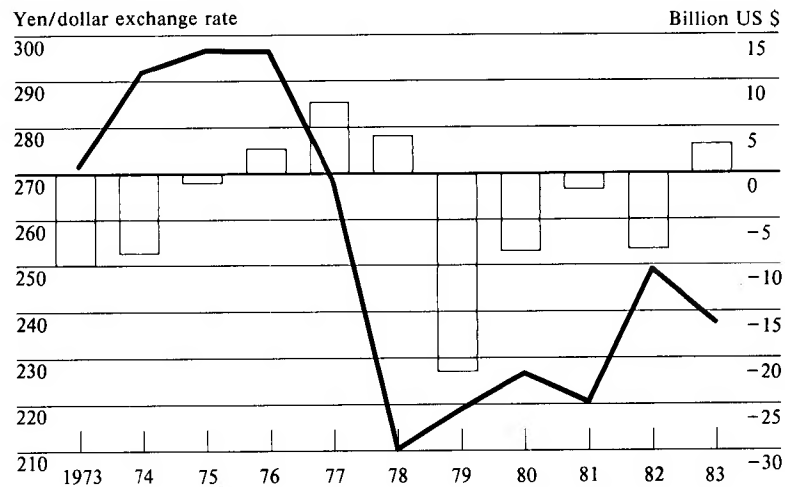
Measurements of the yen's value using this technique vary with the base period selected, however. When Morgan uses a base period of 1973, the yen is shown as undervalued by more than 10 percent. In addition to the problem of reaching a consensus about a time period when currency alignment is about right, there are also difficulties in deciding which inflation rate series should be used. For these reasons, trade-weighted, price-adjusted measures of yen undervaluation are debatable.

We believe, nonetheless, these indexes are useful in providing estimates of bilateral currency movements. The trend of the yen in bilateral terms is striking:

- Against the major European currencies such as the deutsche mark, the yen has been relatively stable over the last decade and appreciated significantly in 1983.
- Against the dollar, on the other hand, our own calculations show the trade-weighted, price-adjusted index for the yen has plunged by nearly 30 percent since 1980 and is currently about 20 percent below its 10-year average rate against the dollar, despite mild appreciation last year.



**Figure 6**  
**Japan: The Yen's Value and the**  
**Basic Balance, 1973-83**



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**Table 1**  
**Japanese Balance of Payments**

Billion US \$

	1982	1983		1982	1983
Current account balance	6.9	21.0	Inflows	12.4	14.7
Trade balance	18.1	31.6	Direct investment	0.4	0.4
Exports	137.7	145.4	Securities investment	7.6	8.5
Imports	119.6	113.8	External bonds	4.3	5.7
Services and transfers	-11.2	-10.6	Other	0.1	0.1
Long-term capital balance	-15.0	-17.8	Basic balance	-8.1	3.2
Outflows	-27.4	-32.5	Nonmonetary short-term capital balance	-1.6	0.2
Direct investment	-4.5	-3.6	Errors and omissions	4.7	1.8
Loans	-7.9	-8.4	Overall balance	-5.0	5.2
Trade credits	-3.2	-2.7	Commercial banks short-term	0	-3.6
Securities investment	-9.7	-16.0	net position		
Other	-2.1	-1.8	Official settlements balance	-4.9	1.6

**Confidential****What Drives the  
Yen Up and Down?**

It is impossible to capture and accurately quantify all the variables that affect the yen's value, but we believe it is possible to identify key variables. In our view, changes in Japan's basic balance—the current account surplus plus net long-term capital flows—provide the best explanation for the yen's movements since it began to float against other currencies in 1973. The connection between the yen and the basic balance is understandable since the latter encompasses all the transactions involving international demand for and supply of the yen except for short-term capital flows and errors and omissions. Short-term flows generally have a neutral effect on exchange rates because they usually are offset by forward exchange contracts to eliminate risk:

- Annual changes in the basic balance and the yen-dollar exchange rate appear connected. The 40-percent appreciation of the yen in 1977 and 1978 accompanied rare basic balance surpluses.
- From 1980 through 1982, the basic balance also appears to have influenced quarterly movements of trade-weighted, price-adjusted yen rate series.

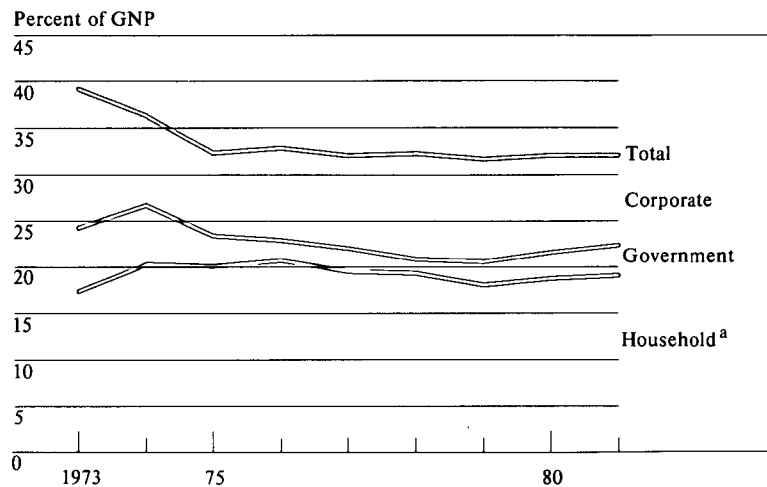
The yen's depreciation in 1982 can thus be viewed as the result of a basic balance deficit caused by net long-term capital outflows exceeding a small current account surplus. As the current account mushroomed in 1983, it overwhelmed capital outflows. The yen appreciated somewhat as a result.

OECD attempts to quantify the relative importance of the two major components of the basic balance—the current account and interest-sensitive capital movements—in relation to the yen's value have been only partially successful:

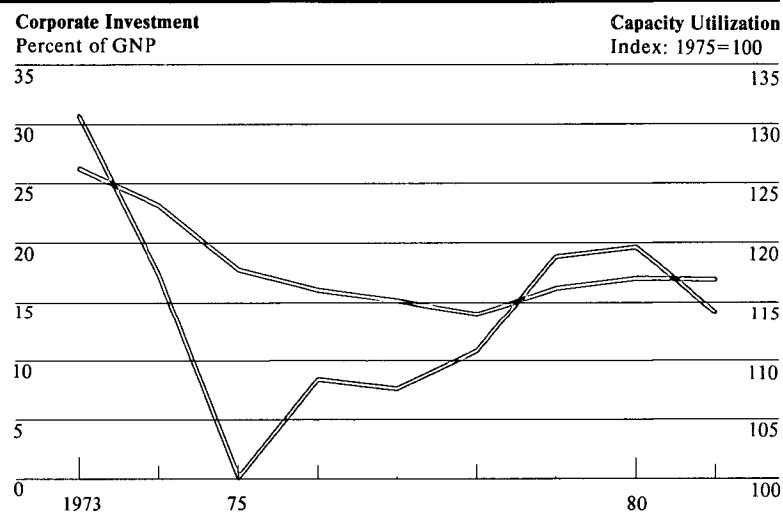
- According to OECD studies, interest rate differentials between the dollar and yen assets were marginally more important than cumulative current account balances of the two countries in fostering yen-dollar movements between 1973 and 1981. These factors, together with differences in inflation rates and adjustment for “dollar unease” during the second half of 1978, accounted for 83 percent of the observed movements.
- The relative importance of interest rates diminished when the OECD extended the study to cover the period through the first quarter of 1983. Moreover, the new equation only explained 66 percent of the yen's movements.

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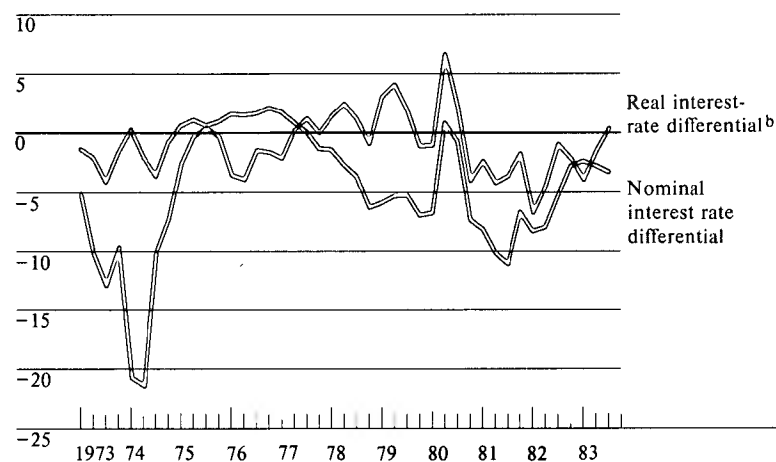
**Figure 7**  
**Japan: Savings by Sector, 1973-81**



**Figure 8**  
**Japan: Capacity Utilization and Corporate Investment, 1973-81**



**Figure 9**  
**Japan-US: Short-Term Interest-Rate Differentials, 1973-83<sup>a</sup>**



<sup>a</sup> Quarterly data. Negative numbers indicate US interest rates exceed Japanese interest rates.

<sup>b</sup> Real interest rates are nominal rates adjusted by a six-quarter declining geometric average of the GNP deflator, which is used as a proxy for inflationary expectations.

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**Confidential****Why Have Capital Outflows Accelerated?**

Japan has chalked up deficits on long-term capital in nine of the last 10 years. A combination of factors, including an excess of domestic savings over investment, has caused these persistent deficits.

The imbalance between savings and investment is a chronic problem that also has a cyclical element. When domestic factors push the economy into a recession, outflows usually increase because investment drops off more sharply than savings:

- Japan has a high personal savings rate due to a variety of institutional and cultural factors, including a social security program that is less generous than those in other major countries, low income taxes, and limited mortgage financing. The aging of the Japanese population is expected to reduce the savings rate over the long run, but only very gradually.
- Investment, on the other hand, is cyclical. Corporate investment, which accounts for over half of total Japanese investment, generally increases when business conditions improve and capacity utilization rates rise.

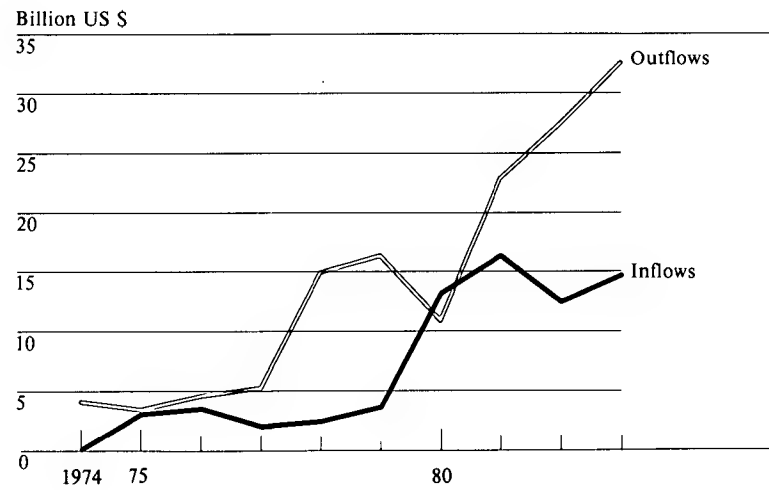
Fiscal policies both in Japan and the United States have exacerbated these underlying trends during the 1980s:

- Fears about the government's future refinancing needs caused Tokyo to formally abandon stimulative fiscal policies in 1980. To offset the contractionary effect on domestic demand, monetary policy was eased somewhat, putting downward pressure on interest rates.
- At about the same time, the United States began to loosen fiscal and tighten monetary policies, which pushed up real interest rates.
- A gap between real interest rates in the two countries developed early in 1981, encouraging capital to flow from Japan to the United States. Deregulation of financial markets and changing inflationary expectations in the United States also helped create interest rate differentials that persisted through most of 1983.
- These differences in policy have also occurred to a lesser extent between the United States and Europe, offering a partial explanation for the relatively close tracking of the yen and major European countries.

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**Figure 10**  
**Japan: Capital Flows, 1974-83**



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**The Effect of Financial  
Liberalization on  
Capital Flows**

Relaxation of foreign exchange controls in Japan has contributed to the growth in capital outflows in recent years as investors have altered the currency mix of their existing asset portfolios:

- The foreign exchange law implemented in December 1980 removed the 3-million-yen (\$13,000) ceiling on foreign asset holdings by individual Japanese investors.
- Life insurance companies, permitted by the Ministry of Finance to hold up to 10 percent of their assets in foreign securities, bought \$3 billion of these instruments in fiscal year 1982.
- In October 1983 the Finance Ministry eased restrictions on yen offshore lending by Japanese banks.

Long-term capital inflows, like outflows, have increased sixfold since 1977, when Japan began to liberalize capital transactions in earnest. They, nonetheless, remain only half as large as outflows in dollar terms. Western analysts blame this relatively low level on residual legal restrictions on inflows, interest rate ceilings, the limited choice of instruments available, and the shallowness of asset markets in Japan. We believe these criticisms are only partially justified:

- Legal barriers prevent foreign companies—along with domestic ones—from buying up Japanese companies without permission of the firm's board of directors. Foreign investment in 11 designated companies also has been circumscribed, but the Diet is considering legislation to remove these restrictions.
- Interest rates on time deposits in commercial banks are regulated under authority of a 1947 law. On the other hand, interest rates in short-term money markets and in the secondary market for long-term bonds are freely determined.
- Monetary authorities in Tokyo have thus far refused to permit treasury bill or corporate paper sales in Japan, limiting investors' options.
- The limited size of corporate bond markets in Japan makes them unattractive to large investors, who, if they needed to liquidate their portfolios quickly, would risk driving down the price of the assets they were selling. On the other hand, the equity market in Japan as of 30 November 1983 is large by international standards as indicated in the following tabulation:

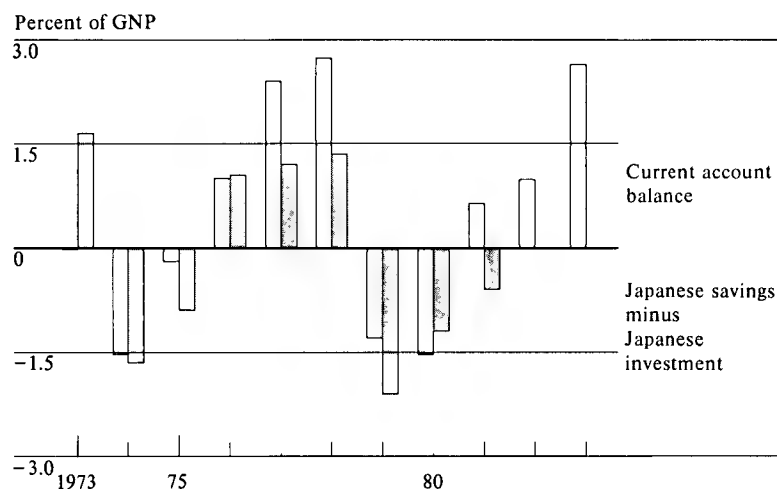
<i>Billion US \$</i>			
United States	1,595	West Germany	85
Japan	475	Australia	60
United Kingdom	210	France	40
Canada	125		

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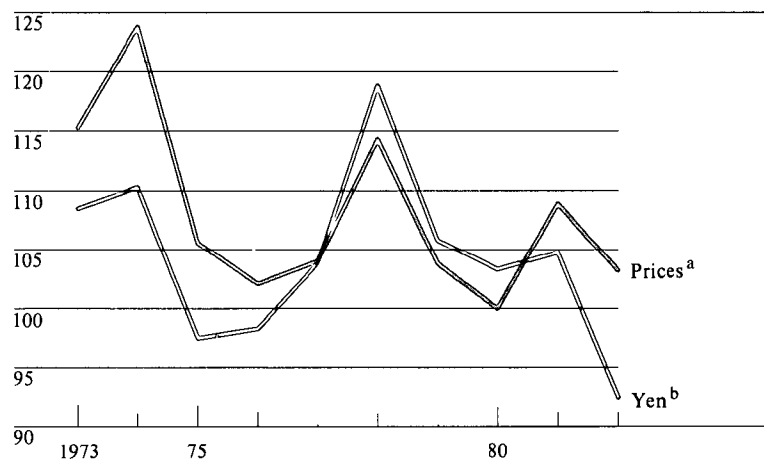
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**Figure 11**  
**Japan: Excess Savings and Current**  
**Account Balances, 1973-83**



**Figure 12**  
**Japan: Price-Adjusted, Trade-**  
**Weighted Movements of the Yen and**  
**Export Prices, 1973-82**



<sup>a</sup> Relative export prices for Japan (1980=100)  
 This index represents the ratio of Japanese export prices to a weighted geometric average of 13 other industrial countries.

<sup>b</sup> Trade-weighted, price-adjusted yen (1980-82=100)

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**Confidential****The Current Account  
Part of the  
Basic Balance**

Although growth in capital outflows from Japan led to yen weakness early in the 1980s, the tripling of the current account surplus last year triggered yen appreciation. We believe cyclical factors—both globally and within Japan—are largely responsible for the surge in the current account surplus:

- The yen-denominated unit value index for imports declined 10 percent in 1983, because, given the limited economic recovery worldwide, industrial raw material markets remained soft.
- The volume of Japanese imports also fell, reflecting drawdowns in accumulated inventory that built up during the recession in Japan that ended early in 1983.
- The robust economic recovery in the United States coupled with yen-dollar misalignment boosted Japanese exports to their largest market 18 percent last year. This more than offset reduced sales to developing nations and permitted a 6-percent increase in total exports.

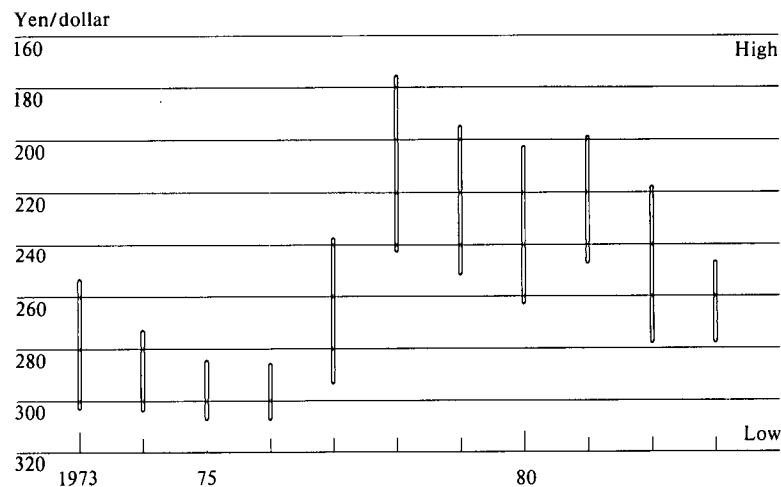
The growth in protectionism in countries Japan trades with also added to the surplus, by permitting Japan to boost the relative price of its goods independently of changes in the exchange rate. *The Economist* has characterized this phenomenon as one of “larger surplus but stable market share.”

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**Figure 13**  
**Japan: The Yen's Volatility Against**  
**the Dollar, 1973-83**



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**Table 2**  
**Liberalization Measures and Capital Flows <sup>a</sup>**

Measure	Impact on Capital Flows
Repeal of designated company system, which has limited foreign investment in 11 Japanese companies	+
Relaxation of guidelines on Japanese corporate issues of Euro-yen bonds	+
Removal of requirement that forward purchases of yen in Tokyo be accompanied by an underlying trade transaction	=
Reduction in the minimum denomination of certificates of deposit	+

<sup>a</sup> A plus sign indicates the new or proposed measure is likely to stimulate capital inflows. An equal sign indicates the measure's effect on the capital flows is indeterminate.

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**Confidential****Prospects for  
Yen Appreciation**

The consensus of market analysts is that the current account surplus will be large enough in 1984 to keep the basic balance in surplus and to engender yen appreciation of 5 to 10 percent against the dollar.

Underlying these predictions are three key assumptions about Japanese economic policies, namely that monetary policy will remain cautious, that new financial liberalization measures will tend to foster capital inflows rather than outflows, and that the divergence between Tokyo's and Washington's fiscal policies will stabilize or narrow. We believe there is a good chance that all three conditions will be met:

- In keeping with its policy last year, the Bank of Japan is likely to make further easing of Japanese monetary policy contingent on a loosening of US monetary policy. The central bank delayed a cut in the discount rate several times last year because it feared such a move would accelerate capital outflows.
- On the fiscal policy side, differences between the United States and Japan may narrow. Nakasone's second cabinet, appointed in December 1983, includes Toshio Komoto as head of the Economic Planning Agency. Komoto, more charismatic and powerful than his predecessor, is pushing for fiscal stimulus in the form of investment tax credits.
- The capital market liberalization measures already announced for 1984 look like they will have a positive or indeterminant impact on capital inflows.

History shows, however, that another year of relative stability in yen-dollar rates would be extremely unusual. The yen is extremely volatile and subject to speculative runs that could alter the yen's value more rapidly than is now expected. We believe changes—or anticipated changes—in US economic policies could spark very rapid yen appreciation.

On the other hand, with raw materials and fuels constituting three-fourths of Japanese imports, sharp rises in commodity prices could cause renewed yen depreciation. If commodity prices accelerate in response to unexpectedly strong global economic recovery or if oil prices soar because of an escalation of tensions in the Middle East, the projected large and growing current account surplus for Japan could easily evaporate. The other downside risk for the yen involves an increase in the pace at which Japanese investors are diversifying the currency denomination of their portfolios.

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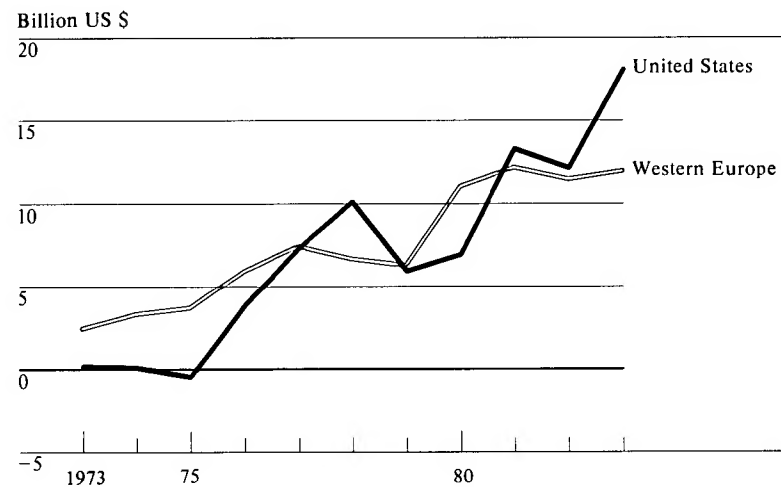
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**Figure 14**  
**Japan: The Yen and Export**  
**Market Share, 1973-82**



<sup>a</sup> A yen index below 100 indicates the yen is undervalued against other major currencies relative to 1980-82 baseline.

**Figure 15**  
**Japan: Trade Balance With the**  
**United States and Western Europe,**  
**1973-83**



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**How the Yen's  
Value Affects  
Trade Balances**

If the yen appreciates as most analysts expect, the price of Japanese goods relative to the cost of other countries' goods should increase. Such declines in competitiveness have taken their toll on export volume relatively swiftly in the past:

- Work done by the OECD in 1980 indicates that price changes associated with currency appreciation reduce the volume of manufactured exports more rapidly in Japan than in other industrialized countries. According to the OECD study, a 10-percent increase in relative prices cuts Japanese export volume by 6.4 percent and US exports by 4.5 percent during the first year.
- The Japanese experience in 1977-78 conforms to the swift reaction pattern identified by the OECD. A 40-percent appreciation of the yen against the dollar in 1977 and 1978 abruptly ended a two-year export drive, and Japan's share of total OECD exports shrank.

The time lags involved in the adjustment of trade volumes to exchange rates temporarily cause perverse movements in the trade balance, even when the lags are relatively short, as in Japan:

- Yen appreciation boosts the dollar value of an unchanged volume of exports. This ensures that the trade surplus will widen until volume adjustment occurs.

As far as sales to Western Europe are concerned, it appears that the adjustment of trade to last year's yen appreciation has begun:

- Japanese exports to Europe in January 1984 were off 5 percent from levels a year ago.
- Japanese manufacturers of construction machinery and precision instruments are running into stiff European competition in third-country markets in the Middle East and Southeast Asia.

In the United States, however, Japanese goods are still quite competitive. The yen's strengthening against the dollar in 1983 offset only about one-sixth of the real depreciation that had taken place in the preceding two years. Until this misalignment is corrected, Japan will continue to run massive trade surpluses with the United States, although as economic recovery takes hold in Japan the size of the surplus may decline somewhat.



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